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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/434,575	11/04/1999	DAVID A. G. DEACON	SPK-002	4114

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EXAMINER	
JACKSON, CORNELIUS H	

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 05/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/434,575	Applicant(s) DAVID A. G. DEACON	
	Examiner Cornelius H. Jackson	Art Unit 2828	

-- The MAILING DATE of this communication app ars on the cover sh et with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Acknowledgment

1. Acknowledgment is made that applicant's Amendment, filed on 11 January 2002, has been entered. Upon entrance of the amendment claims 36-51 were cancelled. Claims 1-35 are now pending in this case.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. For example, see page 17, line 34.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the

specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brinkman et al. (6167169). Brinkman et al. disclose a method of adjusting a resonant cavity of a laser device comprising operating the laser device to produce an optical output; monitoring the optical output to determine the free spectral range of the laser device; and permanently modifying the effective refractive index of at least a portion of the intracavity waveguide segment, **see col. 2, line 37 through col. 4, line 31 and all throughout the document**. Brinkman fail to disclose the degree of the free spectral range being substantially equal to the predetermined rational fraction of a specified frequency channel spacing over a portion of an operating frequency band, but Brinkman does disclose making the free spectral range equal to the channel spacing plus a few times the frequency width, **see col. 45, line 59 through col. 46, line 4**, therefore it would have not been inventive since it has been held where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or

workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

In regards to claim 2, Brinkman et al. teach modifying the effective refractive index comprises illuminating the waveguide with an energy beam, **see col. 2, lines 37-49**.

In regards to claim 3, it would have been obvious to one of ordinary skill in the art that electromagnetic radiation in the form of ultraviolet radiation and induced chemical alteration in the intracavity waveguide segment is suggested in the disclosure of Brinkman et al.

In regards to claim 4, Brinkman et al. teach the waveguide segment comprises a polymer structure and crosslinking in the polymer material, **see col. 17, lines 20-38**.

In regard to claims 5-6, Brinkman et al. teach all the stated limitations, **see col. 60, line 61 through col. 61, line 12**.

In regard to claims 7-9 and 12-15, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

In regard to claims 10-11, Brinkman et al. teach all stated limitations, **see col. 33, lines 28-65**.

In regards to claim 16, Brinkman et al. teach all stated limitations, **see col. 6, lines 55- 65**.

In regards to claim 17, it is obvious that the invention claimed in claim 1 employs the waveguide device claimed in claim 17. Therefore the rejection of claim 1 holds also on claim 17.

In regards to claim 18, also see claim 2 above.

In regards to claim 19, also see claim 3 above.

In regards to claim 20, also see claim 4 above.

In regards to claim 21, also see claim 5 above.

In regards to claim 22, also see claim 6 above.

In regard to claims 23-25 and 26-29, also see claims 7-9 and 12-15 above.

In regard to claims 30-32, also see claim 3 above.

In regards to claim 33, Brinkman et al. teach phase matching, **see col. 24, line 55 through col. 25, line 14**.

In regards to claim 34, Brinkman et al. teach temperature control, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a heater element disposed adjacent to the index grating if so desired as an obvious design choice, **see claims 7-9 and 12-15 above**.

In regards to claim 35, also see claim 16 above.

Response to Arguments

6. Applicant's arguments filed 11 January 2002 have been fully considered but they are not persuasive.

Applicant arguments are as follows:

a. Brinkman et al. fail to disclose Applicant's claimed invention since the effective refractive index modification is temporary and not permanent.

b. Brinkman et al. does not teach modifying the refractive index in col. 17, lines 20-38.

c. Brinkman et al. does not relate in any way to the resonant cavity of a laser device in col. 24, line 55-col. 25, line 14.

Examiner replies as follows:

a. It is obvious that the invention of Brinkman can retain the modification of the effective refractive index if desired, thereby becoming permanent.

b. The citation of col. 17, lines 20-38 was used in rejecting claim 4 which stated the limitation of the waveguide segment comprises a polymer structure and crosslinking in the polymer material, not modifying the refractive index.

c. The citation of col. 24, lines 55-col. 25, line 14 was used in rejecting claim 33 which cited phase matching the grating for coupling an optical frequency of the light source into the resonant cavity (waveguide segment). The citation of col. 24, lines 55-col. 25, line 14 teach coupling between an input beam of a first waveguide and the output beam of a second waveguide.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sesko et al. (6205159) teach a method of adjusting a resonant cavity of a laser device comprising operating the laser device to produce an optical output and monitoring the optical output to determine the free spectral range.

Rakuljic et al. (5691989) and Linke et al. (6363097) both teach a method of adjusting a resonant cavity of a laser device comprising operating the laser device to produce an optical output, monitoring the optical output to determine the free spectral range and permanently modifying the effective refractive index of the intracavity waveguide segment.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (703) 306-5981. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

chj
May 2, 2002

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